AMENDMENTS TO THE CLAIMS

1. (Original) A method for diagnosing a granulocyte disorder comprising:

detecting in a biological sample from a subject a level of expression of one or more granulocyte-selective markers,

comparing the level of expression of each of the one or more granulocyte-selective markers with a reference level of expression, wherein a statistically significant difference between the level of expression of at least one granulocyte-selective marker and an expected level of expression for the at least one granulocyte-selective marker is indicative of a granulocyte disorder in the subject.

2. (Original) The method of claim 1, wherein the reference level of expression for a granulocyte-selective marker is a normal level of expression of the granulocyte-selective marker in a normal granulocyte.

3. (Original) The method of claim 1, wherein the biological sample is a blood sample.

4. (Original) The method of claim 1, wherein the biological sample is a tissue sample.

5. (Original) The method of claim 1, wherein the level of expression of each of the one or more granulocyte-selective markers is determined by determining an amount of an mRNA in the biological sample corresponding to each of the one or more granulocyte-selective markers.

6 (Original) The method of claim 5, wherein the method of determining the amount of mRNA comprises reverse transcription polymerase chain reaction (RT-PCR) amplification.

7. (Original) The method of claim 1, wherein the level of expression of each of the one or more granulocyte-selective markers is determined by determining an amount of a protein in the biological sample corresponding to each of the one or more granulocyte-selective markers.

8. (Original) The method of claim 7, wherein the method of determining the amount of a protein that corresponds to a granulocyte-selective marker comprises contacting the biological sample with an antibody that binds to the protein.

9. (Original) The method of claim 1, wherein a higher level of expression of at least one of the one or more granulocyte-selective markers in the biological sample compared to the expected level of expression for the at least one granulocyte-selective marker is indicative of the granulocyte disorder.

10. (Original) The method of claim 1, wherein a lower level of expression of at least one of the one or more granulocyte-selective markers in the biological sample compared to the expected level of expression for the at least one granulocyte-selective marker is indicative of the granulocyte disorder.

11. (Original) The method of claim 1, wherein the granulocyte disorder comprises an abnormally high number of one or more types of granulocyte in the biological sample.

12. (Original) The method of claim 1, wherein the granulocyte disorder comprises an abnormally low number of one or more types of granulocyte in the biological sample.

13. (Original) The method of claim 1, wherein the granulocyte disorder comprises an abnormal pattern of expression of one or more granulocyte selective markers in one or more types of granulocyte in the biological sample.

14. (Original) A method for diagnosing a non-neutrophil granulocyte disorder or mast cell disorder comprising:

detecting in a biological sample from a subject a level of expression of one or more non-neutrophil granulocyte or mast cell selective markers,

comparing the level of expression of each of the one or more non-neutrophil granulocyte or mast cell selective markers with a reference level of expression, wherein a statistically significant difference between the level of expression of at least one non-neutrophil granulocyte or mast cell selective marker and an expected level of expression for the at least one non-neutrophil granulocyte or mast cell selective marker is indicative of a non-neutrophil granulocyte disorder or mast cell disorder in the subject.

15. (Original) The method of claim 14, wherein the non-neutrophil granulocyte disorder is a basophil disorder.

16. (Original) The method of claim 15, wherein the basophil disorder is a basophil-associated tumor or cancer.

17. (Original) The method of claim 14, wherein the non-neutrophil granulocyte disorder is an eosinophil disorder.

18. (Original) The method of claim 17, wherein the eosinophil disorder is an eosinophil-associated tumor or cancer.

19. (Original) The method of claim 14, wherein the mast cell disorder is a mast cell-associated tumor or cancer.

20-48. (Canceled)

49. (Original) An assay for identifying a compound that alters at least one physiological property of a granulocyte comprising:

contacting a granulocyte with a candidate compound that interacts with a granulocyte-selective marker,

determining at least one physiological property of the granulocyte after contact with the candidate compound,

comparing the at least one physiological property to one at least one reference property to determine whether the candidate compound alters at least one physiological property of the granulocyte.

50-71. (Canceled)